Appln. No.: 09/050,808
Amendment Dated: September 23, 2003
Reply to Office Action of: June 3, 2003

MAT-5860

**Amendments to the Claims:** This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1.    (Cancelled)

2.    (Previously Presented)  The method of decoding an image signal of claim 12, wherein if the predicted pixel blocks are free from decoding error,

the predicted pixel blocks produced from a latest decoded frame is used in reconstruction of the present pixel block.

3.    (Cancelled)

4.    (Cancelled)

5.    (Cancelled)

6.    (Cancelled)

7.    (Previously Presented)  The decoding apparatus of claim 20, wherein the means for storing stores bit errors of plural video frames by plotting pixel blocks in which bit error is detected in each video frame in a form of decoding error maps.

8.    (Cancelled)

9.    (Cancelled)

10.    (Cancelled)

11.    (Cancelled)

12.    (Currently Amended)  A method ~~for~~ of decoding block N+1 according to claim 21, wherein ~~an image signal representing motion,~~ the image signal ~~being~~ is a bit stream of a coded compressed video signal, the method further comprising the steps of:

decoding the bit stream for information defining pixel blocks, the information including motion vectors;

step b) includes the step of detecting an error in the information of one of the pixel blocks being blocks N and N-M in each of at least two frames which are prior to a present frame said present frame being frame N+1, said at least two frames being frames N and N-M;

Appln. No.: 09/050,808
Amendment Dated: September 23, 2003
Reply to Office Action of: June 3, 2003

MAT-5860

storing error information of the one of the pixel blocks in each of the at least two frames which are prior to the present frame, in an error memory;

storing, in a frame memory, video information of the at least two frames which are prior to a present frame;

generating from the decoded motion vectors at least two predicted pixel blocks corresponding to a present pixel block in the present frame;

step b) further includes the step of judging if one of the at least two predicted pixel blocks corresponds to error information of the at least two frames stored in the error memory; and

step c) includes the step of using ~~based on the judging, determining if the~~ one of the at least two predicted pixel blocks ~~is used~~ in reconstructing the present pixel block based on the judging.

13.    (Previously Presented)  The method for decoding an image signal of claim 12, wherein each of the predicted pixel blocks is generated from reconstructed video frames by using motion vectors which correspond to the reconstructed video frames.

14.    (Previously Presented)  The method for decoding an image signal of claim 12, wherein if one of the at least two predicted pixel blocks is judged to correspond to error information stored in the error memory, the other of the at least two predicted pixel blocks is used in reconstruction of the present pixel block.

15.    (Previously Presented)  The method of decoding an image signal of claim 12, wherein if the at least two predicted pixel blocks are judged not to correspond to error information stored in the error memory, an average of the at least two predicted pixel blocks is used in reconstructing of the present pixel block.

16.    (Currently Amended)  A method ~~for~~ of decoding ~~an image signal representing motion~~ block N+1 according to claim 21, said method further for ~~and~~ reconstructing video frames of the image signal, the method further comprising the steps of:

decoding the image signal for information to define pixel blocks of video frames, the information including motion vectors;

step b) includes the step of generating decoding error maps indicating decoding errors of pixel blocks being blocks N and N-M in each of at least two frames which are prior to a present video frame said present frame being frame N+1, said at least two frames being frames N and N-M;

Appln. No.: 09/050,808
Amendment Dated: September 23, 2003
Reply to Office Action of: June 3, 2003

MAT-5860

storing the decoding error maps in error memory;

storing, in a frame memory, video information of the at least two frames which are prior in time to the present video frame;

generating from the decoded motion vectors at least two predicted pixel blocks corresponding to a present pixel block in the present video frame; and

step b) further includes the steps of determining if a predicted pixel block includes decoding errors corresponding to decoding errors in either of the at least two frames which are prior to the present frame; and based on the determining, judging if the predicted pixel block is used in reconstructing the present video block.

17. (Currently Amended) A decoding apparatus ~~for decoding an image signal representing motion; the decoding apparatus comprising;~~ according to claim 22, wherein said detector includes

a decoding device for decoding the image signal to define pixel blocks of video frames, the image signal including motion vectors;

means for detecting decoding errors of the pixel blocks being blocks N and N-M in each of at least two frames which are prior to a present video frame said present frame being frame N+1, said at least two frames being frames N and N-M;

an error memory for storing decoding error maps of the decoding errors of the pixel blocks in each of the at least two frames which are prior to the present frame;

motion compensation means for generating from the decoded motion vectors at least two predicted pixel blocks corresponding to a present block which is block N+1 in a present video frame which is frame N+1; and

predicted image selecting means, based on the decoding error maps, determining if the predicted pixel blocks include decoding errors corresponding to decoding errors in either of the at least two frames which are prior to the present frame, and thereby determining use of the predicted pixel blocks in reconstructing the present block.

18. (Previously Presented) The decoding apparatus of claim 17, wherein the video signal is a bit stream of variable length code, and the decoding device separates and decodes the variable length code from the bit stream and writes presence or absence of decoding errors in the decoding error maps.

19. (Previously Presented) The decoding apparatus of claim 17, wherein the motion compensation means generates one predicted pixel block based on a reconstructed video frame which is one frame before the present frame, and generates another predicted pixel block based on a reconstructed video frame which is two frames before the present frame.

20. (Currently Amended) A decoding apparatus ~~for decoding an image signal representing motion, the image signal being a bit stream of a coded compressed video signal, the decoding apparatus comprising:~~ according to claim 22, wherein said detector includes

means for decoding the bit stream for information defining pixel blocks, the information including motion vectors;

means for detecting an error in the information of one of the pixel blocks being blocks N and N-M in each of at least two frames which are prior to a present frame said present frame being frame N+1, said at least two frames being frames N and N-M;

means for storing error information of the one of the pixel blocks in each of the at least two frames which are prior to the present frame;

means for storing video information of the at least two frames which are prior to a present frame;

means for generating from the decoded motion vectors at least two predicted pixel blocks corresponding to a present pixel block which is block N+1 in the present frame;

means for judging if one of the at least two predicted pixel blocks corresponds to error information of the at least two frames stored in the means for storing; and

means for determining if the one of the at least two predicted pixel blocks is used in reconstructing the present block, based on judging of the means for judging.

21. (New) A method of decoding block N+1 in frame N+1 of successive frames of a predictively coded image signal, said method comprising the steps of:

a) evaluating block N of frame N and block N-M of frame N-M of said signal, wherein blocks N-M, N and N+1 are in corresponding locations of frames N-M, N and N+1, respectively, M=>1;

b) identifying an error in one of block N and block N-M;

c) using the other of block N and block N-M to decode block N+1.

Appln. No.: 09/050,808
Amendment Dated: September 23, 2003
Reply to Office Action of: June 3, 2003

MAT-5860

22.    (New) Apparatus for decoding block N+1 in frame N+1 of successive frames of a predictively coded image signal, said apparatus comprising:

a detector for evaluating block N of frame N and block N-M of frame N-M of said signal, wherein blocks N-M, N and N+1 are in corresponding locations of frames N-M, N and N+1, respectively, M=>1 and for identifying an error in one of block N and block N-M; and

a decoder for using the other of block N and block N-M to decode block N+1.